1035-39-823 **V. L. Kocic*** (vkocic@xula.edu), Mathematics Department, Xavier University of Louisiana, New Orleans, LA 70125. *Dynamics of Some Nonlinear Discontinuous Difference Equations.*

We investigate the dynamics of certain classes of nonlinear discontinuous difference equations. We study the global attractivity, oscillations, and periodicity of positive solutions of discontinuous difference equations of the form

$$\begin{aligned} x_{n+1} &= \frac{r(x_n)x_n}{K+(r(x_n)-1)x_n}, n=1,2,... \\ x_{n+1} &= \frac{\mu x_n}{k(x_n)+(\mu-1)x_n}, n=1,2,... \end{aligned}$$

where $\dot{\mu}>1, K>0$; $r(x)$ and $k(x)$ are discontinuous functions of the form

$$\begin{aligned} r(x) &= \mu+\lambda h(x-c) \\ k(x) &= K+Lh(x-d) \end{aligned}$$

($\mu>1, \mu+\lambda>1, K>0, K+L>0$; h is Heaviside's function).

Both equations represent discontinuous versions of well-known Beverton-Holt model

$$x_{n+1}=\frac{rx_n}{K+(r-1)x_n}, n=1,2,...$$

in the cases when either inherent growth rate r or carrying capacity of the environment K are not constants, but instead discontinuous functions of the population density x_n. (Received September 16, 2007)